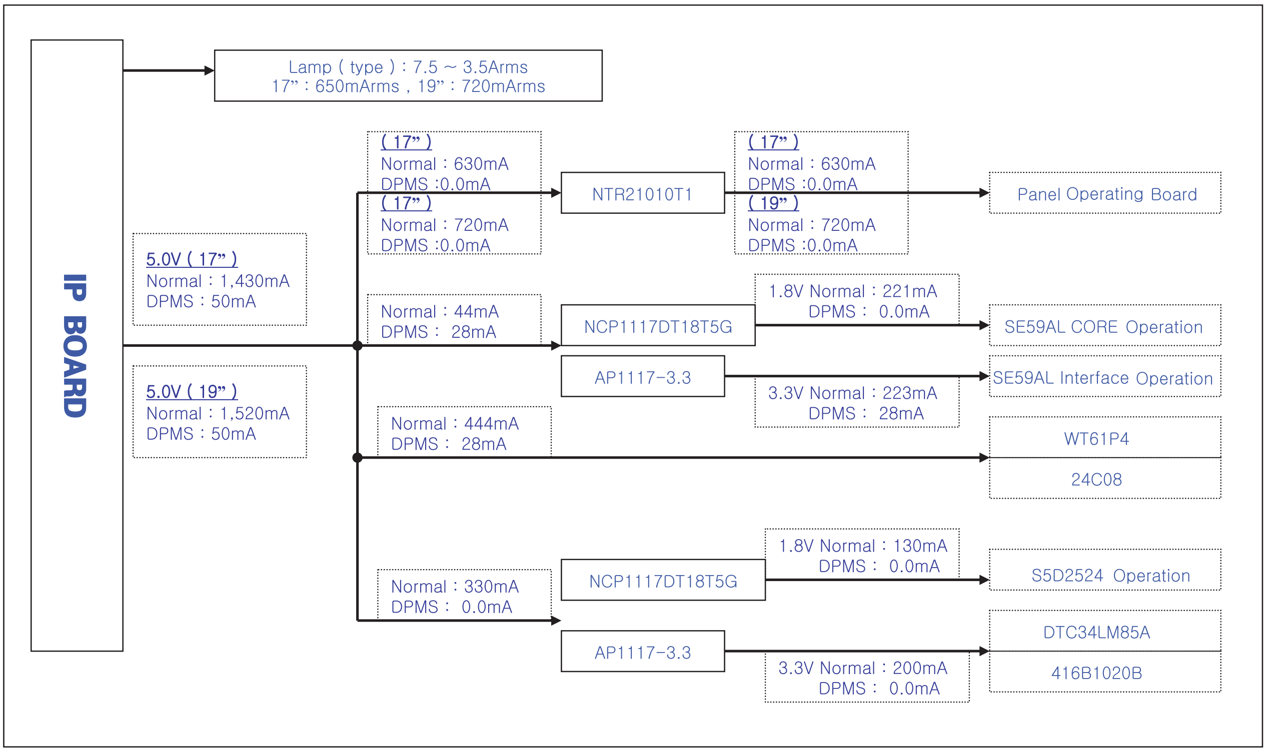
13 Circuit Descriptions

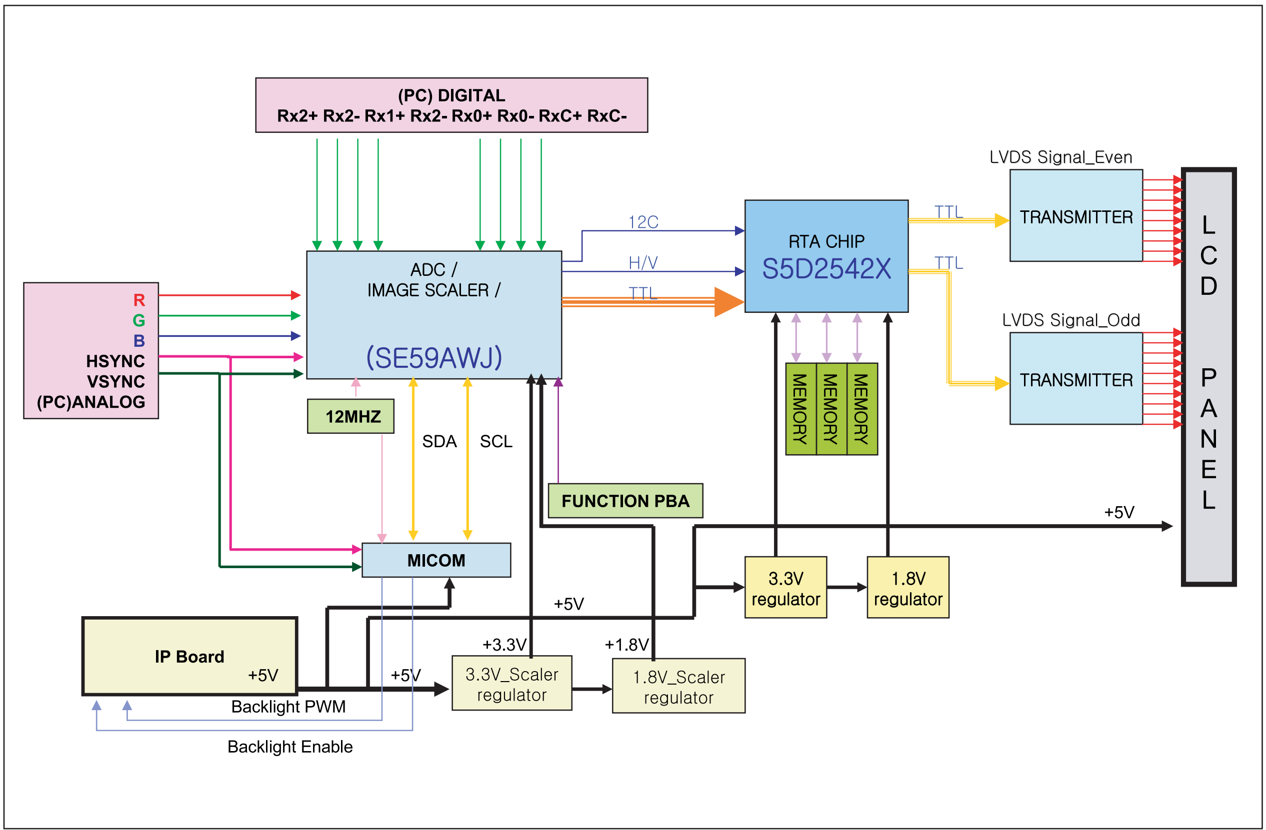
13-1 Overall Block Structure

13-1-1 Power Tree



1. When the AD board is in DPMS state:
   1.1 The IP has been designed so that it operates with a power consumption of less than 0.6W of.
   1.2 The Scaler consumes power up to 28mA
   1.3 The power to the panel is switched off
   1.4 The MCU consumes power up to 28mA.
   --> The total current consumption to the DPMS is less then 60mA
   and the total power consumption is 0.6W + 5V*60mA = 0.9W so that the total power consumption is less than 1W.
2. When the AD board is operating normally:
   2.1 The maximum power consumption of the panel lamps is described below (It may vary depending on the panel manufacturer)
   17" : 4*(7.5mA*650mVrms)=4*4.9=19.6W
   19: : 4*(7.5mA*720mVrms)=4*5.4=21.6W
   2.2 The power consumption of the Panel Control board is as follows: 5V*720mA=3.6W
   2.3 The power consumption of the Scaler is as follows: 3.3V*223mA + 1.8V*221mA = 1.13W
   2.4 The power consumption of the MCU is as follows: 5V*44mA =0.22W

13-1-2 Main Board Parts



1. Inverter: A conversion device that converts DC rated voltage/current to high ones necessary for the panel lamp.

2. DC/DC(Regulator): General term for DC to DC converting devices.
   The IP board receives 5V and outputs 1.8 or 3.3V that is supplied to the scaler (SE59AWJ).

3. Power MosFET: The IP board receives 5V and outputs a lower voltage in DPMS mode and supplies the whole 5V for the panel operating board in normal conditions. In that case, the switching of Power MosFET is controlled by Micom.

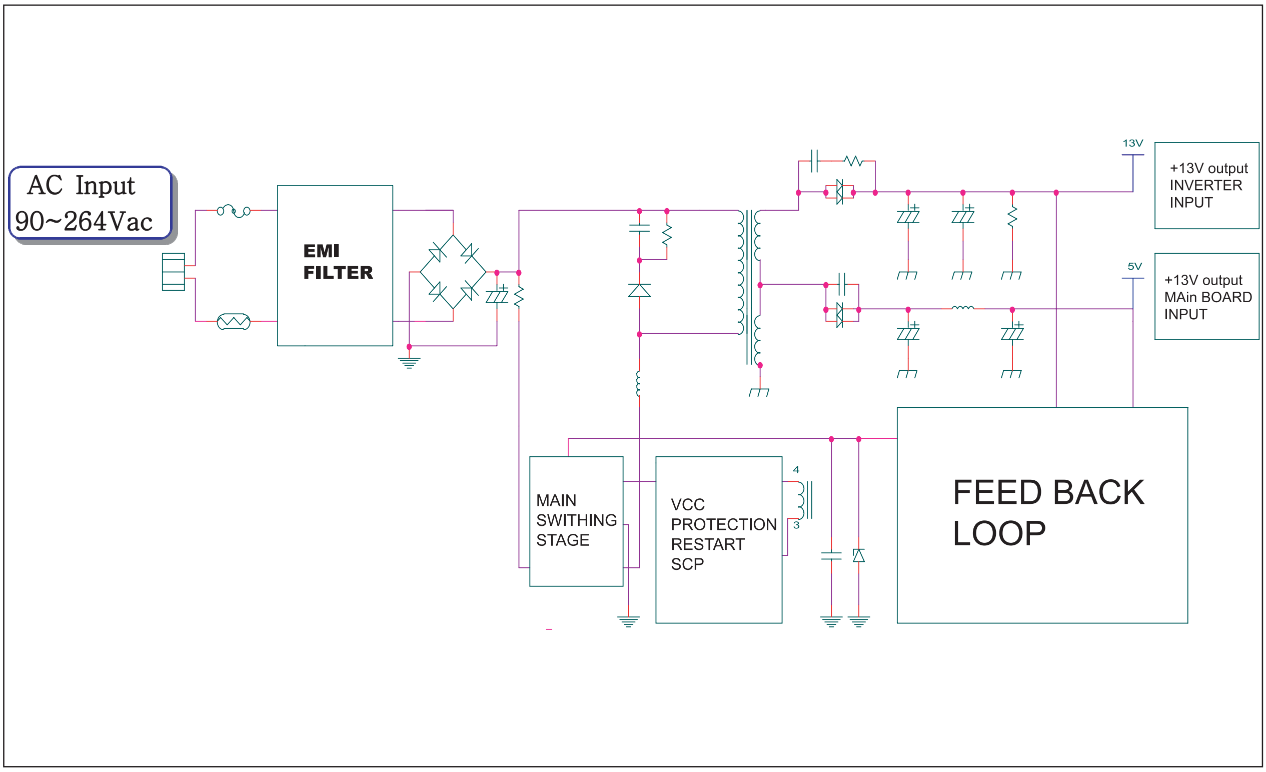
4. Scaler: Receives the digital TMDS and analog R,G,B signals and convert them to proper resolutions using up- or down- scaling that are transferred to the panel in the TTL formats.

5. Crystal(Oscillator): Use one 24MHz oscillator externally to supply power to both MCU and Scaler at the same time.

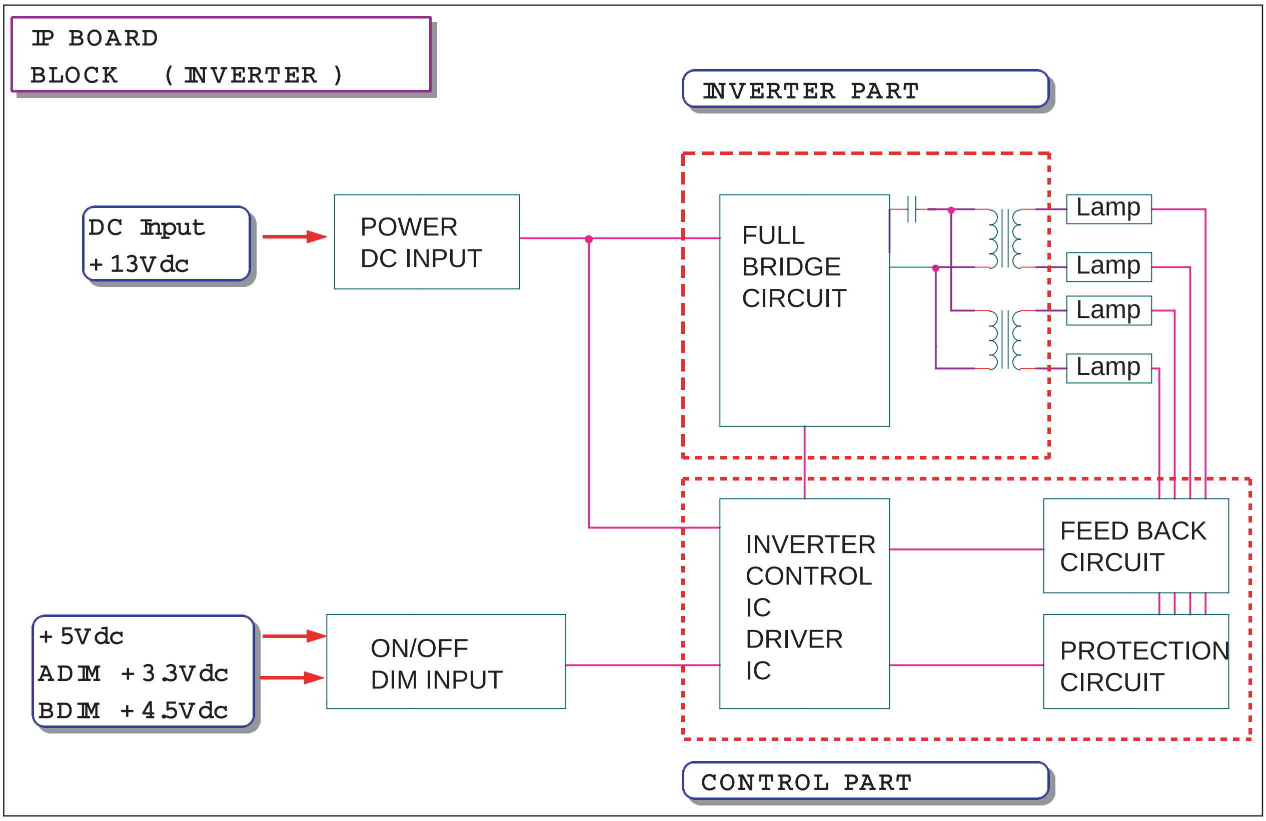
6. MCU & EEPROM: I2C is a two-way serial bus of two lines that supports communications across the integrated circuits as well as between MCU, Scaler and EEPROM.
   In particular, MCU and Scaler (SE59AWJ) use the DDR direct bus for mutual communications, which is an effective, speedy system because it allows 4 additional address/data lines compared to the old serial systems.

7. Function Key: A certain keystroke generates a certain electrical potential, which is transferred into ADC input port of the MCU and then converted to a digital value by the A/D converter of the chip. The digital value (data) is a clue to which key is entered. In practical, the voltage levels are set as below.

13-1-3 IP BOARD BLOCK(POWER) Parts



13-1-4 IP BOARD BLOCK(INVERTER) Parts



13-1-5 IP BOARD (inverter) PROTECTION Parts

BIZET INVERTER CONTROLER FAN7310 have 2-way of the PROTECTION MODE.

1. OVP[Over Voltage Protection] : If the Voltage of the series capacitors C10 & C15 is over the 2.0V, the Inverter latched-off.[See the Picture1]

2. OLP[Over Load Protection] : If the inverter output harness is opened(No-output current), the base of the Q1 turns on and chage the C9 ovter 2V and then, the Inverter latched-off[See the Picture2]

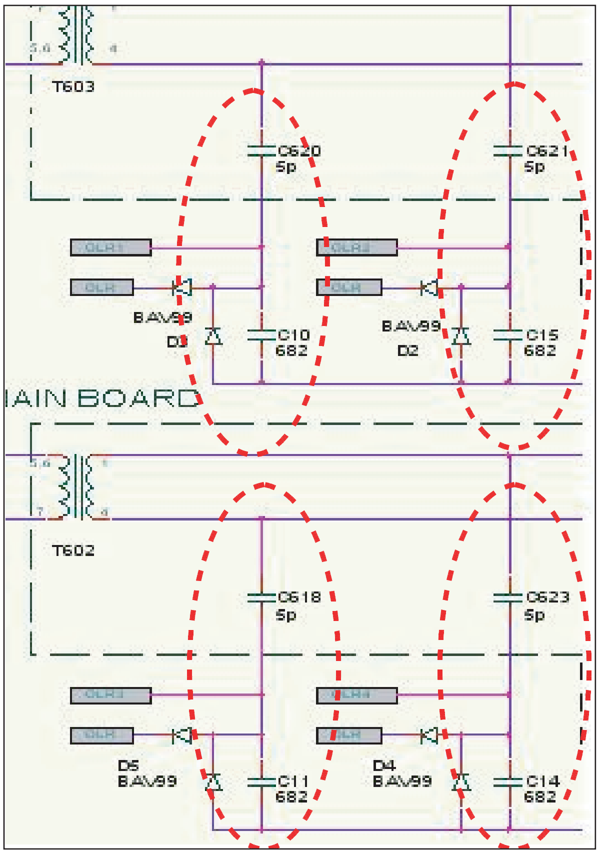


Figure 1.

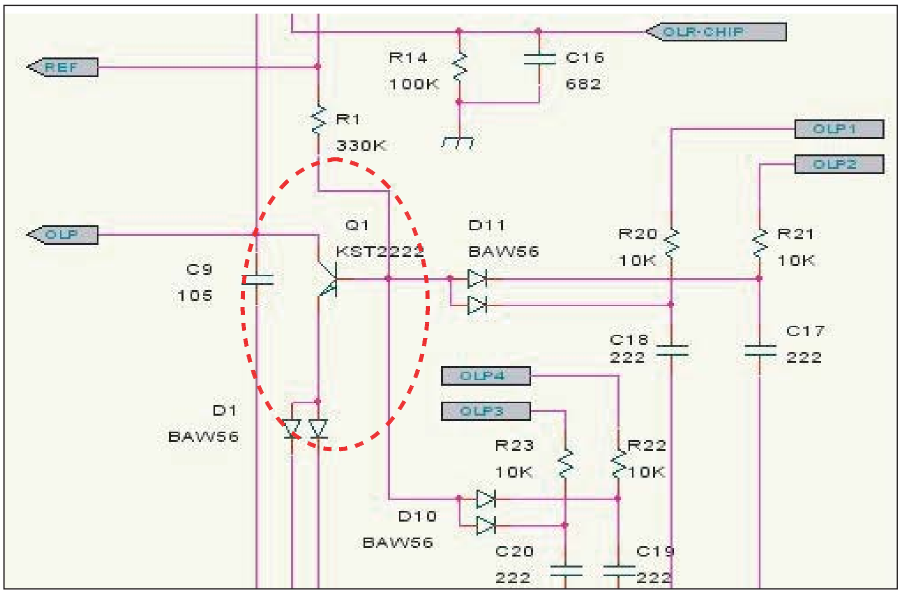
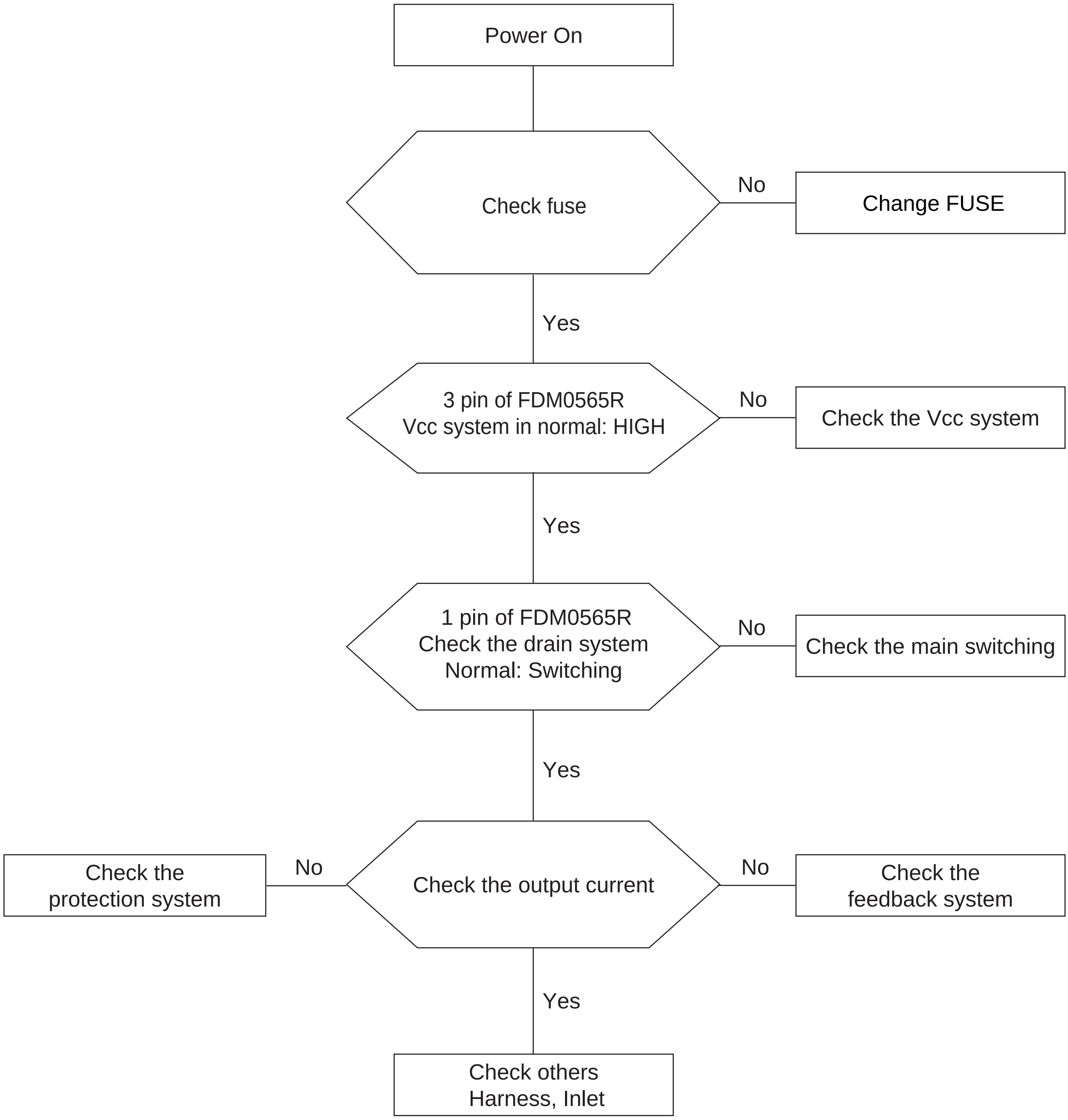


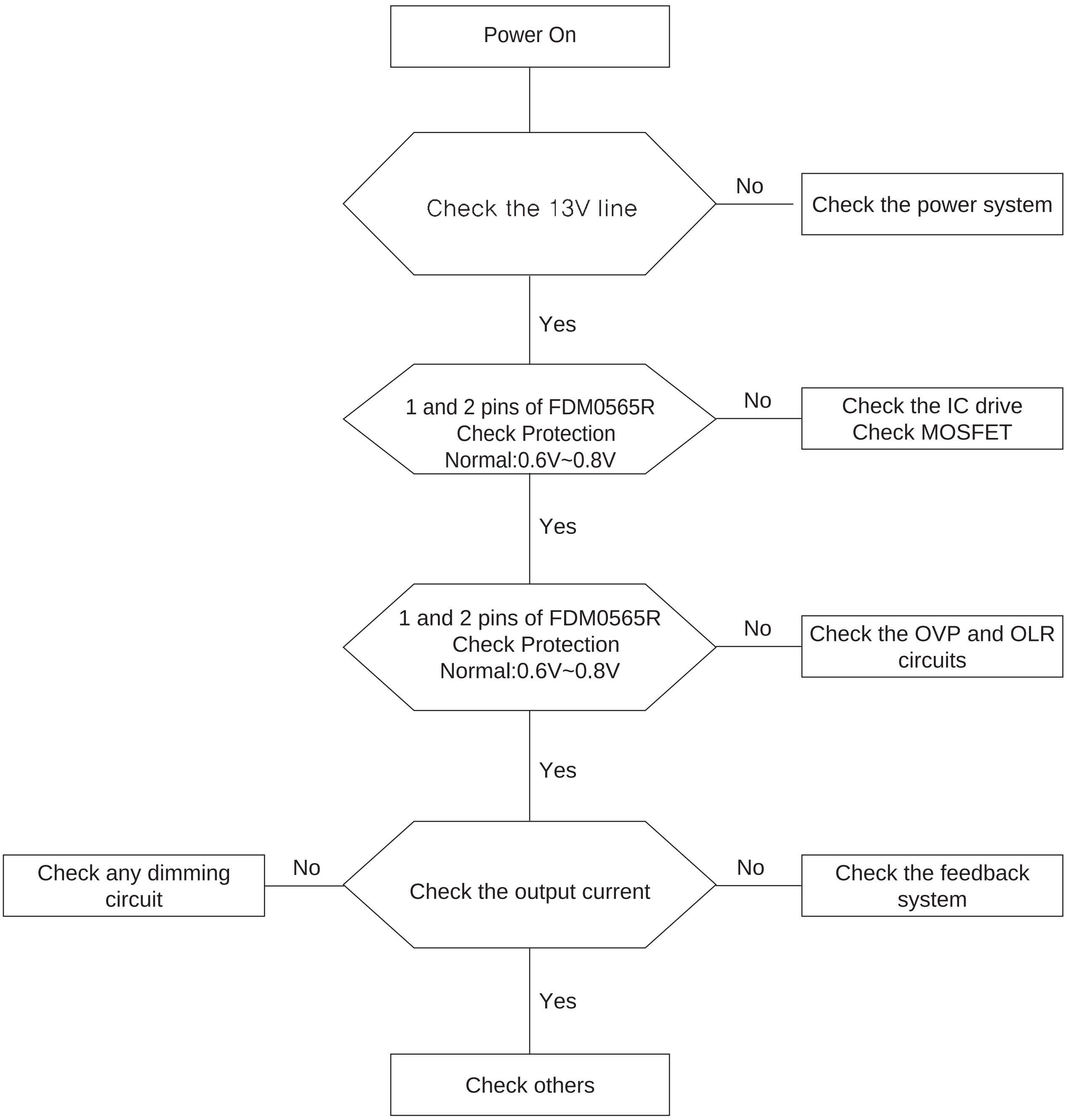
Figure 2.

13-2 Trouble Shooting

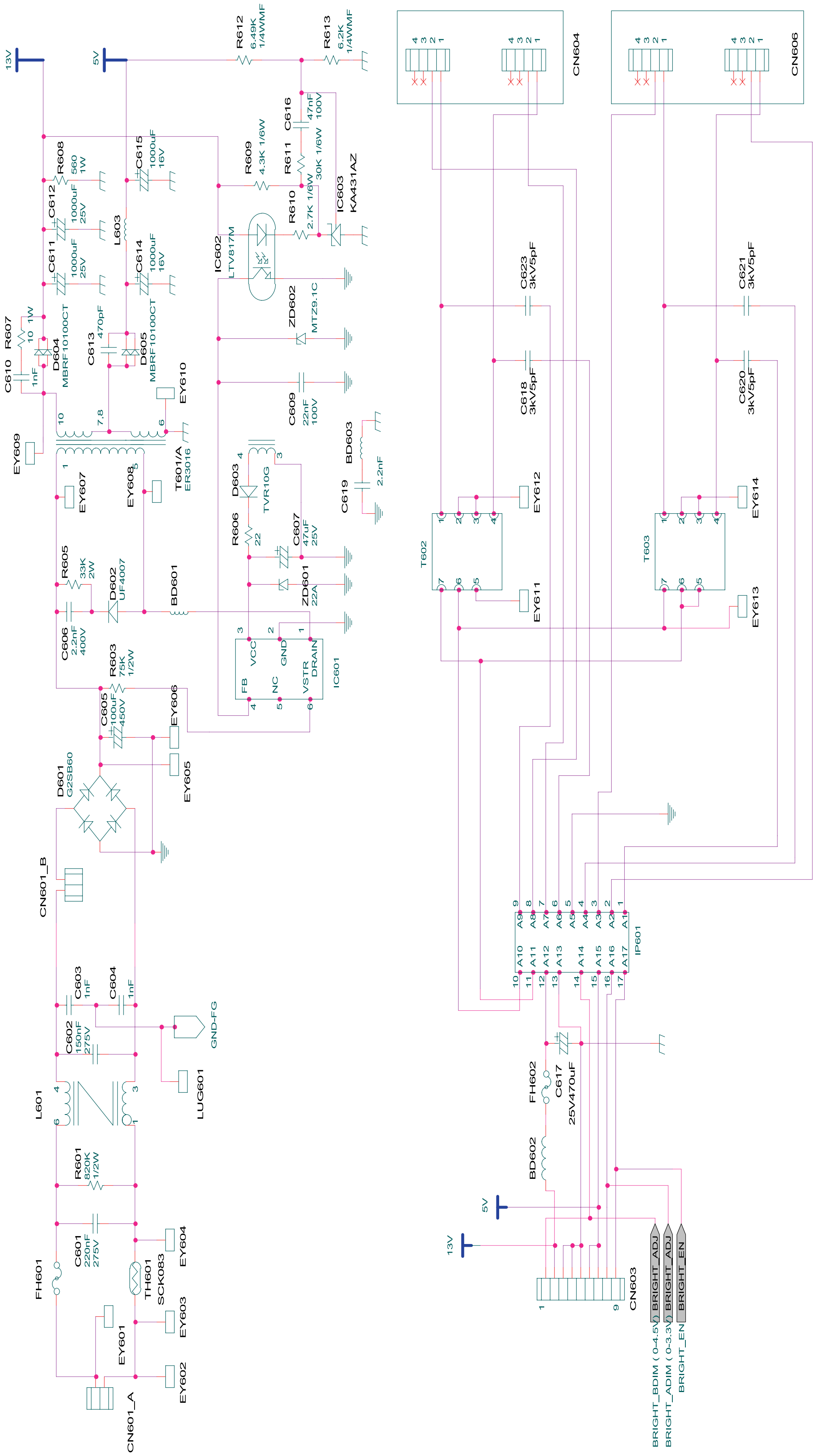
13-2-1 IP BOARD(Power)



13-2-1 IP BOARD(Inverter)



13-3 IP BOARD(Power) Schematic Diagrams



13-4 IP BOARD(Inverter) Schematic Diagrams

